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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,690	07/30/2003	Bijan Raahemi	3439-Z	6556

7590 03/02/2007
Law Office of Jim Zegeer
Suite 108
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Alexandria, VA 22314

EXAMINER

ABRAHAM, ESAW T

ART UNIT PAPER NUMBER

2133

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/629,690	Applicant(s) RAAHEMI, BIJAN	
	Examiner Esaw T. Abraham	Art Unit 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 6-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.



GUY LAMARRE
PRIMARY EXAMINER

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>02/26/07</u> . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/03/05</u> . | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Election / Restriction

1. Restriction to one of the following invention is required under 35 U.S.C. 121

GROUP I.

Claims 1-5, drawn to a method of performing single bit error corrected M-bit words that have been scrambled using a self synchronizing scrambler, the method comprising steps of: a) calculating an N-bit CRC every K words of a block of J words using a generator polynomial, where J is a non-zero integer multiple of K; b) forming an M-bit word from the calculated N-bit CRCs, where M is a non-zero integer multiple of N, and appending this word to the block of J word to form a block of J+1 words for transmission; c) calculating, responsive to receiving a block of J+1 words, another N-bit CRC every K words of the first J words of the received block of J+1 words and using, from the appended word, the N-bit CRC corresponding to the K words in each calculation; and d) correcting, responsive to one of the another N-bit CRCs, computed at the receiver, having a non-zero value, an errored bit in the received block of J+1 words, the errored bit being indicated by an entry in a table indexed according to the non-zero value (as in claim 1) classified in 714/781.

GROUP II.

Claims 6-8, drawn an error control block receiver (ECB_Rx) for receiving a performing single bit error corrected M-bit words that have been scrambled using a self synchronizing scrambler comprising: synchronizing means to synchronize the error control block; a buffer to store the M-bit words in a tabular buffer; CRC 16 computation

Art Unit: 2133

means to calculate a syndrome; and a syndrome table, the calculated syndrome being compared with the syndrome table to detect a single bit error (as in claim 6) classified in 714/785.

GROUP III.

Claims 9-13, drawn to an error control block transmitter (ECB_Tx) for use in a single bit error corrected M-bit encoded words, the ECB_Tx comprising computation means to calculate CRC 16 of code words; a buffer to store the code words in a tabular buffer; and transmitting means to selectively transmit the code words (as in claim 9) classified in 714/758.

The invention are distinct, each from the other because of the following reasons: Invention Group I and group II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable.

In the instance case, invention GROUP I has separate utility separate utility such as calculating, forming CRC words in the transmission side and then calculating and correcting the CRC words in the receiving side.

In the instant case, the invention of GROUP II has separate utility such as an error control block receiver comprising a synchronization means, a buffer to the store M-bit words, CRC computation means for calculating syndrome and a syndrome table for comparing the syndrome table to detect a single bit error.

In the instant case, the invention of GROUP III has a separate utility such as an error control transmitter comprising a buffer to store codewords and a transmitter for selectively transmitting the codewords. See MPEP 806.05(d).

Because these inventions are distinct for the reason given above and the search required for GROUP I is not required for GROUP II and GROUP III, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reason given above and the reasons given above and search required for GROUP II is not for GROUP I and GROUP III, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reason given above and the reasons given above and search required for GROUP III is not for GROUP I and GROUP II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Jim Zegeer on 26 Ferbruay 2007 a provisional election was made with out traverse to prosecute the invention of GROUP I, claims 1-5.

Affirmation of the election must be made by applicant in replying to this office action. Claims 6-13 are cancelled from further consideration by the examiner 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in

the specification. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

DETAILED ACTION

Information Disclosure Statement

1. The references listed in the information disclosure statement submitted on 05/23/05 have been considered by the examiner (see attached PTO-1449).

Claim objections

2. Claim 1 is objected to because of the following informalities:

In line 10, "this word to the block" should recite ---the said M-bit word to the block ---- to show proper antecedent.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention

3. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the receiver" in lines 19 and 20. There is insufficient antecedent basis for this limitation in the claim.

Claims 2-5 depend from respective claim, hence inherit the deficiencies of claim 1.

Allowable subject matter

4. Claims **1-5** would be allowable if rewritten or amended to overcome the claim objection and the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action

Examiner's statement for reason for allowance

5. Claims **1-5** have been allowed.

The following is an examiner's statement for allowance:

As per claim 1:

The prior art of record, Azadet et al. (U.S. PN: 7,089,485) substantially disclosed Data frames or packets received from the MAC interface are provided to the scrambler block 412 for scrambling. In a preferred embodiment of the invention, the scrambler logic block 412 utilizes a self-synchronizing scrambler using a polynomial such as $X^{43}+1$ which is relatively prime with the CRC-32 generator polynomial used to provide a CRC-32 data token, thus preserving the error detection capability of the data frame CRC (see page 5, lines 51-62). Further, Azadet et al. in figure 5, step 542, a cyclical redundancy check (CRC) of the received packet is calculated and, at step 544, the CRC is inserted within the respective IPG and further at step 550, the data packet is scrambled and the data packet received is scrambled while the control information comprising the termination flag and, optionally, one or more nonces is not scrambled.

The prior art of record, Watanabe et al. (U.S. PN: 7,020,833) teach syndrome calculation circuit (337) performs syndrome calculation and error correction calculation based on this; if there is an error, the data in the data buffer (215) is corrected through

Art Unit: 2133

Buffer_Manager (311). The descrambler descrambles the reproduced data. The result is input to CRC check circuits 335 to 336 and the CRC calculation result after correction is found from the error information found by CRC calculation and syndrome calculation circuit 337. This result is input to the scrambler determination circuit so that a CRC calculator result without error is selected for descrambling. These scramblers correspond to the scrambler check circuits (306 to 307) on recording and are the same in number as in the previous example. If errors cannot be eliminated by the CRC calculation, an error that is incapable of correction by any means is deemed to have occurred and this is reported through WCS (313) etc that controls the recording and reproduction operation, so that the necessary action, such as retrying, can be performed (see col. 19, lines 35-57).

However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a method of performing single bit error corrected M-bit words that have been scrambled using a self synchronizing scrambler, the method comprising steps of calculating an N-bit CRC every K words of a block of J words using a generator polynomial, where J is a non-zero integer multiple of K, forming an M-bit word from the calculated N-bit CRCs, where M is a non-zero integer multiple of N, and appending the said M-bit word to the block of J word to form a block of J+1 words for transmission, calculating, responsive to receiving a block of J+1 words, another N-bit CRC every K words of the first J words of the received block of J+1 words and using, from the appended word, the N-bit CRC corresponding to the K words in each calculation; and correcting, responsive to one of the another N-bit CRCs, computed at a receiver,

Art Unit: 2133

having a non-zero value, an errored bit in the received block of J+1 words, the errored bit being indicated by an entry in a table indexed according to the non-zero value. Consequently, claim 1 is allowed over the prior art.

Claims 2-5 depends from independent claim 1 inherently include limitations therein and therefore are allowable as well.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PN 7,089,485 Azadet et al.

USPN: 7,020,833 Watanabe et al.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8am-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decay can be reached on (571) 272-3819. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

Art Unit: 2133

Information regarding the status of an Application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or PUBLIC PAIR. Status information for unpublished applications is available through Private Pair only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Esaw Abraham

Art unit 2133